



LD Biopharma, Inc.
9924 Mesa Rim Road, Suite B
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human 14-3-3 zeta Protein
Catalog Number: hRP-1708
Manufacturer: LD Biopharma, Inc.

Introduction

Human 14-3-3 protein Zeta gene product belongs to the 14-3-3 family of proteins which mediate signal transduction by binding to phosphoserine-containing proteins. This highly conserved protein family is found in both plants and mammals, and this protein is 99% identical to the mouse, rat and sheep orthologs. The encoded protein interacts with IRS1 protein, suggesting a role in regulating insulin sensitivity. Recent data indicated that 14-3-3 zeta protein plays a major role in controlling cancer cell metabolism by targeting Myc for its degradation.

Full-length human 14-3-3 zeta cDNA (244aa) gene was constructed using gene synthesis technology with codon optimization. A tag of 31 aa (T7/His/TEV cleavage site) was fused to 14-3-3 zeta N-terminal. This protein is expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: 14-3-3 zeta (YWHAZ; HEL-S-3; HEL4; KCIP-1; YWHAD)
Accession Number: NP_003397
Species: Human
Size: 25 µg / Vial
Composition: 0.25 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Liem Phan., et al., *The cell cycle regulator 14-3-3 zeta opposes and reverses cancer metabolic reprogramming*. Nature Communication. DOI: 10.1038/ncomms8530. (2015)



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Zhao, G.Y., et al., *The overexpression of 14-3-3zeta and Hsp27 promotes non-small cell lung cancer progression.* Cancer 120 (5), 652-663 (2014)

Ramteke MP, et al., *Identification of a novel ATPase activity in 14-3-3 proteins--evidence from enzyme kinetics, structure guided modeling and mutagenesis studies.* FEBS Lett. 588 (1), 71-78 (2014)

Li Z, et al., *Determinants of 14-3-3sigma protein dimerization and function in drug and radiation resistance.* J. Biol. Chem. 288 (44), 31447-31457 (2013)

Applications

1. May be used for in vitro 14-3-3 zeta protein mediated cMyc pathway regulation study for tumor cells with "ProFectin" reagent based intracellular delivery of this protein.
2. May be used as specific protein substrate for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for protein-protein interaction mapping.
4. Potential tumor therapeutic protein, which could be used for targeting c-Myc pathway for tumor treatment development.
5. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGFDFKNELVQKAKLAEQAERYDDMAACMKSVTEQGAEL
SNEERNLLSVAYKNVVGARRSSWRVSSIEQKTEGAEEKQOMAREYREKIETELRDICNDVLSL
LEKFLIPNASQAESKVFYLMKMGDYRYLAEVAAGDDKKGIVDQSQQAYQEAFEISKKEMQPTH
PIRLGLALNFSVFYIEILNSPEKACSLAKTAFDEAIAELDTLSEESYKDSTLIMQLLRDNLTLW
TSDTQGDEAEAGEGGEN